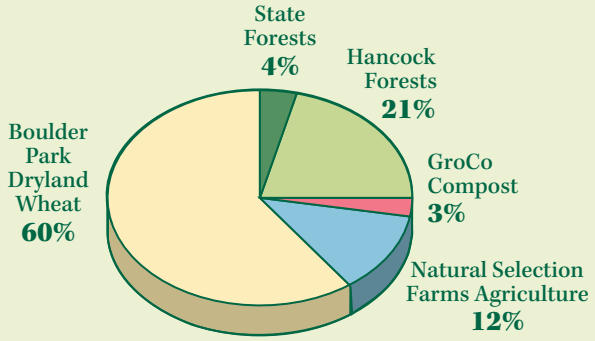
Biosolids Recycling 2008 Summary

WHERE do the biosolids go?

For more than 30 years, King County has been turning wastewater solids into a natural resource called biosolids. This valuable soil amendment can be used to build soils, fertilize crops and other plants, and revegetate barren areas.

All of King County's biosolids are used beneficially in agriculture and forestry or as an ingredient in compost. When recycled into the soil, biosolids will:

- *retain soil moisture*
- *reduce erosion*
- *add organic matter*
- *improve soil tilth*
- *slowly release essential nutrients*



116,066 tons of biosolids
(**28,434** tons of dry biosolids)

West Point: 51,701 tons (4 daily truckloads)

South Plant: 64,365 tons (6 daily truckloads)

King County spent about $6.4 million in 2008 on its biosolids management program. Land application and transportation to project sites averaged $45 per ton. The program generated more than $141,000 in fertilizer revenue from customers.

Transportation to project sites	**63%**
Land application	**18%**
Land application support (monitoring, research, permits)	**8%**
Staff wages and benefits	**11%**
Total budget	**100%**

Continual Improvement

In 2008 King County's Wastewater Treatment Division (WTD) began transitioning its existing Environmental Management System (EMS) for biosolids into a new International Organization for Standardization (ISO) EMS under the ISO 14001 standard. ISO has global name recognition, broad public acceptance and fits WTD's vision to "Create Resources from Wastewater."

Our environmental management system will be expanded to include additional activities within WTD, beginning with the solids "fenceline" – the parts of WTD's operations and supporting activities that produce and manage grit and screenings, as well as biosolids. This includes:

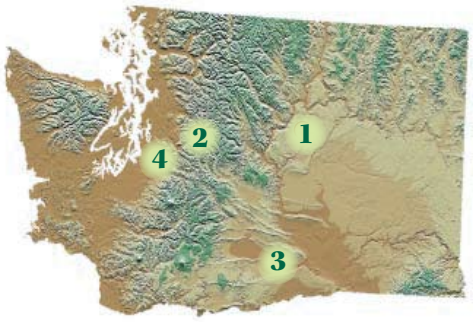
- *Source control/pretreatment*
- *Removal and transport of grit and screenings*
- *Solids digestion, dewatering and hauling*
- *Land application of biosolids*

The EMS will help us evaluate operations and activities that could impact the environment and to identify opportunities to reduce waste and improve our products.

King County
Department of Natural Resources and Parks
Wastewater Treatment Division
Resource Recovery

http://kingcounty.gov/biosolids/

Partnerships in Recycling



1 Boulder Park Soil Improvement Project encompasses more than 50,000 acres of dryland grain crops in Douglas County. More than 120 landowners and farmers participate in this project. Biosolids from other agencies are also recycled at this site, helping to satisfy local demand. In 2008, King County biosolids fertilized 5,220 acres of wheat and 956 acres were fertilized with biosolids from other sources.

2 Mountains to Sound Greenway Biosolids Forestry Program is a partnership of private and public agencies that uses biosolids to fertilize and preserve working forests in eastern King County. In 2008 biosolids were applied to 311 acres of state forestlands and to 1,188 acres of Douglas-fir plantations in Hancock's Snoqualmie Forest.

3 Natural Selection Farms in the Yakima Valley includes more than 35,000 acres of hops, orchards, alfalfa, canola and managed rangeland. In 2008, King County biosolids were applied to 1,375 acres of hops and wheat.

4 GroCo Compost has been produced and marketed by a private company, GroCo Inc., for more than 30 years. This composted mixture of biosolids and sawdust is used in residential and commercial landscaping, home gardens and soil restoration.

Alternative formats available
206-684-1247 (voice) or 711 (TTY)

Research

King County is a founding member of the Northwest Biosolids Management Association (NBMA). Members collaborate on research, share technical information and receive training on biosolids recycling. Scientists from universities in Washington, Oregon and Arizona conduct research for NBMA.

Sampling hop fields

A primary research focus is on using biosolids as a tool to reduce greenhouse gas emissions by storing carbon in the soil. A UW-WSU collaborative research project began in 2008 with funding from NBMA and Washington Department of Ecology. The goal of the project is to quantify benefits of land application of organic soil amendments, including biosolids and biosolids composts made with other organic residuals.

Soils with and without organic amendments were sampled at existing field sites across Washington State, including long-term research plots and commercial farms. These soils are being measured for carbon sequestration, water-holding capacity, and nutrient status in order to better understand benefits associated with use of these materials under a variety of management practices. The scientists hypothesize that use of organic amendments has the potential to reduce our carbon footprint while simultaneously securing the sustainability of Washington agriculture.

The Biosolids Team

Peggy Leonard	*Biosolids Program Manager*	206-684-1592
Julie Adams	*Communications, EMS*	206-684-1255
Sue Hennig	*Compost*	206-684-1403
Roberta King	*Program Lead, Research, Regulations*	206-684-1249
Mark Lucas	*Transportation*	206-684-1248
Doug Newlands	*Forestry*	206-263-3420
Lisa Vogel	*Agriculture*	206-263-3428

For more information on biosolids recycling, see our Web pages at http://kingcounty.gov/biosolids/ or call 206-684-1247.

King County
Department of Natural Resources and Parks
Wastewater Treatment Division
Resource Recovery
201 South Jackson Street, Suite 512
Seattle, WA 98104

0904_BSAnSum.indd lpre, sk Produced by: WLRD Visual Communications & Web Unit